

**PM National Air Quality Standards (NAAQS) Talking Points**  
2/3/23

**Annual Average Standard**

- **We support efforts to improve the annual average standard so that it can be set to 8ug/m3 or lower to protect health from fine particle air pollution.**
- SWPA clearly needs a more health protective standard for PM 2.5. A review of science literature affirms PM 2.5 exposure levels and chronic health effects with no apparent lower bound<sup>1</sup> and acute health effects with no apparent lower bound<sup>2</sup>. This means a new standard should be as health protective as possible. We encourage the EPA to set its annual standard to 8 ug/m3, the level at which there is a clear consensus of evidence suggesting benefits for reducing PM 2.5 emissions below this level as an annual standard.
- Southwestern Pennsylvania’s air quality situation deserves particular attention when considering revisions to the NAAQS annual standard and 24-hour standard because special weather, topographic, and point source conditions point to a need to improve both standards.
- Our region’s 2.6 million people are at risk unless both the annual and daily standards are revised. This includes vulnerable populations who bear disproportionate risks from current levels of air pollution: 55,269 children with pediatric asthma; 213,963 people with adult asthma; 160,478 people with COPD; 228,249 people with cardiovascular disease; 267,874 people living with low incomes; and 372,912 people of color.<sup>3</sup> The environmental justice concerns are clear, substantial, and must play a prominent role in setting updated standards.
- The EPA’s own past risk assessment, which is and has been the method for determining the impacts of regulatory changes, calculated that 17,000 long-term PM<sub>2.5</sub> exposure-related deaths from heart disease in a single year will occur by just meeting the current annual standard of 12 ug/m3. Instead, if the standard matched the former World Health Organization’s annual standard of 10 ug/m3, these deaths can be reduced by up to 18% (3060 people) per year. This number jumps up to 27% (4590 people) per year at an annual standard of 9 ug/m3. These

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<sup>1</sup> Cohen, Brauer, et al, “Estimates and 25-year trends of the global burden of disease attributable to ambient air pollution: an analysis of data from the Global Burden of Diseases Study 2015,” *Lancet* 2017; 389: 1907–18.

<sup>2</sup> Schwartz et al, “The Concentration Response Relation between PM 2.5 and Daily Deaths,” *Environ Health Perspect.* 2002 Oct; 110(10): 1025–1029.

<sup>3</sup> ALA SOTA 2022, Available online: <https://www.lung.org/research/sota/city-rankings/states/pennsylvania/alleggheny>, accessed 12/05/22.

numbers are just from heart disease deaths.<sup>4</sup> Overall, it is possible prevent over 12,500 premature deaths per year by embracing a 9 ug/m<sup>3</sup> annual standard.<sup>5</sup>

- Allegheny County ranks in the top 1 percent of counties in the U.S. for cancer risk from point source air pollution. Our air poses a significant threat to public health with an increased risk of heart and lung disease, asthma, diabetes, cancer and premature death.<sup>6</sup>
- The cancer risk for residents of Allegheny County is over six times higher than the national average for residents of other urban counties.<sup>7</sup>
- Cancer risk is 26% greater in Allegheny County communities where 20% or more residents live at or below the federal poverty level, and/or communities where 30% or more residents identify as people of color.<sup>8</sup>
- A 2017 study of asthma in regional schools found children exposed to the highest levels of PM 2.5 had nearly a two-fold risk of having a diagnosis of asthma. In the city of Clairton, where North America's largest coking operation and the region's largest source of particle pollution exists, 34% of the children were at risk for asthma compared to the national rate of 8% and the state and county rates of 10-13%.<sup>9</sup>
- A review of science literature affirms PM 2.5 exposure levels and chronic health effects with no apparent lower bound<sup>10</sup> and acute health effects with no apparent lower bound<sup>11</sup>. This means that it is critical to reduce the PM standard in order to reduce negative health effects.
- In 2022, 179 out of 365 days were considered not good air quality days.<sup>12</sup>

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<sup>4</sup> 85 FR 24094, pp. 24117-24118.

<sup>5</sup> U.S. EPA. Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter, January 2020. EPA-452/R-20-002.

<sup>6</sup> "National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania" (Clean Air Task Force and Cancer & Environment Network of Southwestern Pennsylvania, May 2021 Update). <https://censwpa.org/wp-content/uploads/2021/07/NATA-Factsheet.pdf>

<sup>7</sup> "National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania" (Clean Air Task Force and Cancer & Environment Network of Southwestern Pennsylvania, May 2021 Update). <https://censwpa.org/wp-content/uploads/2021/07/NATA-Factsheet.pdf>

<sup>8</sup> "National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania" (Clean Air Task Force and Cancer & Environment Network of Southwestern Pennsylvania, May 2021 Update). <https://censwpa.org/wp-content/uploads/2021/07/NATA-Factsheet.pdf>

<sup>9</sup> Deborah A. Gentile , Tricia Morphew , Jennifer Elliott , Albert A. Presto & David P. Skoner (2020): Asthma Prevalence and Control among Schoolchildren Residing near Outdoor Air Pollution Sites, Journal of Asthma, DOI: [10.1080/02770903.2020.1840584](https://doi.org/10.1080/02770903.2020.1840584).

<sup>10</sup> Cohen, Brauer, et al, "Estimates and 25-year trends of the global burden of disease attributable to ambient air pollution: an analysis of data from the Global Burden of Diseases Study 2015," Lancet 2017; 389: 1907–18.

<sup>11</sup> Schwartz et al, "The Concentration Response Relation between PM 2.5 and Daily Deaths," Environ Health Perspect. 2002 Oct; 110(10): 1025–1029.

<sup>12</sup> Breathe Project – Air Pollution Sources. Online: <https://breatheproject.org/air-pollution-sources/>, accessed December 5, 2022.

- In 2021, 200 out of 365 days were considered not good air quality days.<sup>13</sup>
- According to an analysis of our region’s pollution sources from the National Emissions Inventory, particle pollution from stationary industrial point source pollution is the largest contributor to our region’s pollution, accounting for approximately half of our region’s pollution.<sup>14</sup>
- An analysis of data from one of our region’s monitors in Allegheny County, Liberty, registered annual particulate matter (PM 2.5) concentrations worse than 90% of all monitors in the U.S. Four other monitors in Allegheny County measured annual PM 2.5 levels worse than 70% of the U.S.<sup>15</sup>

### **24-Hour Standard**

- **We support improving the 24-hour standard so that it is set to 25ug/m3 for the 98<sup>th</sup> percentile.**
- Our region can benefit from revisions to the 24-hour standard because of the unique conditions that exacerbate pollution in Southwestern Pennsylvania in addition to the revisions to the annual standard.<sup>16</sup>
- Allegheny County currently walks the line between attainment and nonattainment of the 24-hour standard based on the latest 2019 – 2021 data, a period that includes large scale economic disruptions that occurred during a global pandemic that caused large reductions in air emissions throughout all the northeastern U.S. Prior to this period, Allegheny County has been a longstanding nonattainment region for the 3-year annual average and 24-average standards every year through the 2018 - 2020.
- Allegheny County, particularly in the Mon Valley near the Liberty Monitor, experiences a substantial number of days with temperature inversions, and these inversions have large impacts on regional air quality. We know that these events frequently occur in the overnight or early morning hours when atmospheric conditions and low wind velocity conditions trap pollution emitted overnight by industrial operators.
- Based on EPA’s Highest-10 NowCast AQI Locations data, which tracks which regions of the country rank in the top-10 worst airsheds, based on Air Quality Index information on an

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<sup>13</sup> Breathe Project – Air Pollution Sources. Online: <https://breatheproject.org/air-pollution-sources/>, accessed December 5, 2022.

<sup>14</sup> Breathe Project – Air Pollution Sources. Online: <https://breatheproject.org/air-pollution-sources/>, accessed December 5, 2022.

<sup>15</sup> Breathe Project – Air Pollution Sources. Online: <https://breatheproject.org/air-pollution-sources/>, accessed December 5, 2022.

<sup>16</sup> USEPA Clean Air Scientific Advisory Committee, “Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft - October 2021),” Online: [https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18\\_ID:2607](https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18_ID:2607), Viewed November 29, 2021. pp. 3-156 and 3-157.

hourly basis, our county has appeared on this top-10 worst about 40% of all days and #1 worst over 10% of all days in 2022.<sup>17</sup>

- The bulk of these appearances occurred in the spring, early summer, and late fall periods of time, when wildfires regions were not dominating this list, as was the case during summer and early fall periods of time, and especially when these overnight temperature inversions were common.
- A Clean Air Task Force analysis of surface emissions under inversion conditions from 2016 – 2019 showed that these temperature inversions augment the pollution gradient to be nearly a factor of 2.0 at the Liberty monitor (to 19 ug/m<sup>3</sup> on average) when compared with surrounding monitors (10 ug/m<sup>3</sup>) under strong inversion conditions.<sup>18</sup> These events can cause short-term spikes in air quality that frequently exceed 150 (Unhealthy for Everyone) level on the AQI for at least several hours in the overnight period that then decrease when the inversions dissipate, typically after 11 am. These weather dynamics result in the 24-hour average coming in just under the 35ug/m<sup>3</sup> 24-hour standard; however, a large portion of the population breathes high levels of pollution in the overnight hours, producing frequent complaints about air quality.
- The Create Lab at Carnegie Mellon University has created a crowdsourced app that documented over 70,000 air quality complaints over 4 years. These complaints are based on people smelling bad air, which has been shown to have a strong correlation with sulfur emissions, precursors to PM 2.5 formation.<sup>19</sup> The visualization of these reports, in another app, “Plume Pgh,” shows how weather inversions trap these pollutants in the Mon Valley, resulting in these smell reports that occur in the waking hours, when people get up and enter the dome of pollution in the mornings.<sup>20</sup>
- Additionally, other evidence of the impact of these inversions can be seen on cameras that are pointed at polluting facilities in the Mon Valley<sup>21</sup>, such as at the Clairton Coke Works<sup>22</sup> and the Edgar Thomson Works.<sup>23</sup>

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<sup>17</sup> EPA AirNow's Worst Ten Air Quality (AQI) Pittsburgh Reporting Areas, Available online: <https://airstats.createlab.org/highest-ten/>, accessed December 5, 2022.

<sup>18</sup> Graham, John. “Pittsburgh Air Quality Trends,” Presentation at the “Air We Breathe Asthma Summit,” Pittsburgh, PA, November 5, 2021.

<sup>19</sup> See “Summary of Findings” and “Relationship between Smell Reports and Pollutants” at <https://smellpgh.org/analysis>

<sup>20</sup> See <https://plumepgh.org/?date=2021-10-14> for a good example.

<sup>21</sup> These cameras can be accessed for any date at <https://breatheproject.org/learn/breathe-cam/>

<sup>22</sup> For one example of many, please see <https://tinyurl.com/5296xytk>.

<sup>23</sup> For one example of many, please see <https://tinyurl.com/y9nnhjwt>.